tentacles (*a* and *b*) greatly developed, but not the smallest trace of a third tentacle, thus resembling *Atractylis bitentaculata*, Wright.

Fig. 3. A young individual of the same species in an earlier stage than that represented in fig. 1, iv. The fourth tentacle (*d*) has just appeared, while the third, opposite to it, is already tolerably long: *a* and *b* are the first pair of tentacles.

Fig. 4. *Hydra oligactis.* A young individual still attached to the parent and already furnished with five tentacles: *a* and *b* first pair; *c* and *d* second pair; *e*, fifth tentacle, the first of the third pair; the sixth is on the point of making its appearance.

XXX.—*Descriptions of new Species of Rhopalocera from Central and South America.* By F. Du Cane Godman and Osbert Salvin.

Nymphalidæ.

Danainæ.

1. *Callithomia panamensis.*

♂. Exp. 2·7 in. Above—basal third of primaries and basal half of secondaries rufous; marginal half of secondaries and apical third of primaries brownish black; an irregular band, crossing the primaries from the costa to the anal angle, and four spots near the apex yellow; a black spot in the middle of the cell, and another at the end confluent with the dark apex. Beneath with six submarginal white spots on the secondaries and two at apex of the primaries. Distal half of the antennæ yellow.

Hab. Panama, Candelaria (*Ribbe*).

Mus. Dr. O. Staudinger.

Obs. In coloration this species almost exactly resembles *Ceratinia megalopolis*, Feld.; the neuration, however, is that of *Callithomia*. It also much resembles *Ithomia beronilla*, Hew., a species which possibly also belongs to the genus *Callithomia*.

2. *Napeogenes pædaretus.*

♂. Exp. 2·65 in. Yellowish diaphanous; margins of both wings, and a triangular spot at the end of the cell, and the radial and median branches of the primaries black; median nervure of the primaries and space below it, the inner edge of the dark margin, also the median nervure of the secondaries and its branches fulvous; apex of the primaries clouded, except elongated yellowish diaphanous submarginal spots between the nervules. Beneath as above, with a row of seven white spots in the dark margin of the primaries, and the same num-

ber in the margin of the secondaries. Antennæ yellow, the base black.

♀. Exp. 2·9 in. Similar to the male, except that the base of the primaries is dark within the cell, leaving a yellowish spot near the end; the inner area of the secondaries is fulvous, with two indistinct yellowish spots on either side of the lower radial.

Hab. Costa Rica (*H. Rogers*).

Mus. nostr.

Obs. This is one of the largest members of the genus, and has a general resemblance in colour to *Ithomia xenos* (Bates); the female closely resembles *I. relata*, Butl., a common species in Costa Rica, and sent in some numbers in the same collection with the *Napeogenes* now described.

3. *Ithomia æsion.*

♂. Exp. 2·1 in. Neuration as in *I. illinissa*; costa, apical half and inner margin of primaries, and margin of secondaries black; inner portion of both wings rufous; five white spots in the dark apex of the primaries, four submarginal and one (the largest) a little beyond the end of the cell. Beneath as above, with the addition of a marginal row of spots on each wing. Antennæ long, black.

Hab. Panama, Candelaria (*Ribbe*).

Mus. Dr. O. Staudinger.

Obs. This species belongs to the *I. illinissa* group, and is most nearly allied to *I. abida*, Hew. It differs in not having a black band across the secondaries.

4. *Ithomia jucunda.*

♀. Exp. 1·85 in. Diaphanous; costa, apex, outer and inner margins of primaries, and a band through the cell following the second median branch, outer margin of secondaries, and all the nervures black; a small opaque white spot beyond the dark band at the end of the cell of the primaries; within the dark margin of the secondaries, between the first and second median branches, is a rufous patch. Beneath—the centre of the dark patch at the end of the cell of the primaries, the costa, and the greater part of the margin of the secondaries rufous; base of the costa of the secondaries yellow. In neuration this species most resembles *I. terra*; the discoidal nervures of the secondaries are almost in a straight line, and carry no recurrent nervule; the junction of the lower radial with the discoidals falls in the diaphanous part of the wing.

Hab. Panama, Candelaria (*Ribbe*).

Mus. Dr. O. Staudinger.

5. *Ithomia cadra.*

♂. Exp. 2·2 in. Neuration as in *I. nephele*, which it also resembles in distribution of the dark and diaphanous parts of the wing; it differs, however, in having the median nervure and inner half of the inner margin of the primaries, and all the nervures of the secondaries, except just where they join the outer margin, rufous: the diaphanous part of the secondaries is also tinged with rufous.

Hab. Panama, Rio Gatun (*Ribbe*).

Mus. nostr. et Dr. O. Staudinger.

Obs. Two specimens obtained by Hr. Ribbe agree in the above characters, which seem to be sufficient to distinguish the species from *I. nephele*, to which it is undoubtedly closely allied, and which is also found in some numbers in Central America, as far north as Costa Rica.

6. *Ithomia rhene.*

♂. Exp. 2·15 in. Allied to *I. cassotis* as to the distribution of the dark and diaphanous portions of the wings, and belonging to the same group; the lower radial of the secondaries makes a more acute angle with the median nervure; and the cell is much longer, leaving the lower radial extremely short.

Hab. Panama (*Ribbe*).

Mus. Dr. O. Staudinger.

7. *Tithorea pinthias.*

♂, exp. 3·6 in.; ♀, 3·8 in. Allied to *T. duenna*; but the base of the primaries is black, and there is no black cross band to the secondaries; the prothorax is black, whereas in *T. duenna* it is rufous: also allied to *T. tarracina*, but differing in the absence of the yellow spots near the apex of the secondaries.

Hab. Panama (*M'Leannan*); Veragua (*Arcé*); Costa Rica (*Rogers*); Nicaragua, Chontales (*Belt*).

Mus. nostr.

We have long hesitated to differentiate this species; but so many examples have now come under our observation, all agreeing accurately with one another, that we think there can be no doubt that the race is a well-defined one, distinct both from its northern relative, *T. duenna*, and from its southern, *T. tarracina*.

Brassolinæ.

8. *Narope testacea.*

♂. Exp. 2·3 in. Above nearly uniform dull brick-red;

apex of the primaries and inner half of the secondaries dull brown. Beneath pale earthy brown, mottled all over with dark scales and spots indistinctly arranged in bands across the cell of the primaries, and more or less parallel to the outer margin; a small black spot near the middle of the costa of the secondaries.

♀. Exp. 2·5 in. Outer margin of primaries convex; outer margin of secondaries slightly angulated. Above uniform earthy brown: beneath paler and sparsely sprinkled with small black spots; a faint pale line runs from the apex of the primaries towards the middle of the inner margin.

Hab. Chiriqui (*Ribbe*).

Mus. Dr. O. Staudinger.

Nymphalinæ.

9. *Phyciodes chromis.*

♀. Exp. 1·9 in. Outer margin of primaries deeply indented. Above brown; a large angulated spot beyond the cell of the primaries, a narrow oblique one within the cell, and five others placed irregularly between the large spot and the outer margin dull yellow; secondaries with a reddish-brown transverse band beyond the cell, a submarginal row of lunules, and between them a third indistinct reddish-brown band. Spots of primaries beneath as above, the base of the wing being pale reddish with dark marks; secondaries reddish brown, with irregular indistinct dark marks, the largest being on the middle of the costa, on either side of which is a lighter transverse line.

Hab. Chiriqui (*Ribbe*).

Mus. Dr. O. Staudinger.

10. *Phyciodes diallus.*

♀. Exp. 1·9 in. Outer margin of the primaries deeply indented. Above brown; a small oblique spot within the cell of the primaries, a large one beyond it cut by the nervules, another below it cut by the median branches, two small spots near the middle of the outer margin, and two others in the apex near the costa white; secondaries with three bands of dark ferruginous brown, nearly concentric with the outer margin. Beneath reddish brown, variegated with lighter shades of the same colour; white spots of the primaries the same as on the upper surface: the secondaries have a large reddish-brown spot about the middle of the costa, and the outer margin of the same colour from the middle to the anal angle; there is also

an indistinct light spot in the middle of the wing beyond the cell.

Hab. Chiriqui (*Ribbe*).

Mus. Dr. O. Staudinger.

11. *Phyciodes poltis.*

♂. Exp. 1·5 in. Outer margin of primaries very slightly concave. Above dark brown; an oblique spot beyond the cell, a round one over the middle of the median branches, a small one near it between the submedian and first median branch fulvous: secondaries with an extracellular transverse pale fulvous band, the part nearest the apical angle reddish fulvous. Beneath—primaries tawny; a dark band, enclosing spots corresponding with those of the upperside, crosses the wing from the costa to the anal angle; outer margin variegated with tawny and reddish brown, some whitish spots on the costal margin near the apex: secondaries yellowish white at the base; an indistinct darkish band crosses the wing from the costa to the inner margin, outside of which is a pale band which embraces the apical angle and crosses the wing to inside the apical angle, which, with the greater part of the outer margin, is reddish and contains a row of black spots.

Hab. Mexico (*Boucard*).

Mus. H. Druce.

The nearest ally of this species seems to be *P. orthia* (Hew.), of South Brazil.

12. *Phyciodes fulgora.*

♂. Exp. 1·7 in. Outer margin of primaries with a deep indentation. Upperside dark brown; a large fulvous patch, consisting of two nearly confluent spots, crosses the wing beyond the cell from the costa to the inner margin; a small spot at the end of the cell, two small white spots near the apex: secondaries with a broad median tawny band and two faint lines of lunules parallel to the outer margin. Beneath reddish tawny, the spots of the upper surface indistinctly shown; some dark lines across the cell, and dark spots near the outer margin between the radial nervures: secondaries pale tawny, inner portion mottled with darker marks; outer part (except the apical angle) dark, enclosing a row of four black subtriangular spots; a line of pale lunules parallel to the outer margin.

♀. Similar to the ♂, but rather larger; the fulvous spots on the primaries larger and confluent.

Hab. Costa Rica (*H. Rogers*).

Mus. nostr.

13. *Phyciodes sopolis.*

♂. Exp. 1·5 in. Outer margin of primaries but slightly concave. Above brown; an indistinct tawny spot in the cell, and a similar one below it; an oblique yellowish spot cut by the nervures beyond the cell touching the costa, and two small yellow spots, one near the middle of the outer margin, the other near the apical angle: secondaries uniform brown, with an obsolete submarginal line of lunules. Primaries beneath rich brown, with transverse oblique bands of tawny running from the costa: secondaries pinkish brown, distinctly variegated with dark patches and dark brown lines running very irregularly across the wing; there are dark patches on the costa and the outer margin, including the anal angle, and an indistinct series of ocelli parallel to the outer margin.

Hab. Choctum, Vera Paz (*G. & S.*).

Mus. nostr.

This species, of which we possess two specimens, seems most nearly allied to *P. fulviplaga*, Butl., but has a much smaller yellow spot on the primaries, and the same wings beneath are variegated at the base instead of being rich uniform brownish black.

14. *Phyciodes sosis.*

♂. Exp. 1·5 in. Allied to *P. ardys* (Hew.), from which it mainly differs in wanting the median yellowish transverse band on the secondaries, having in place of it a very narrow broken line of lunules parallel to the outer margin. Beneath the markings are much as in *P. ardys*, but more distinct, especially on the secondaries.

Hab. Costa Rica (*H. Rogers*).

Mus. nostr. Many examples.

This species has also some resemblance to that recently described by us as *P. drymæa* from Guatemala; but the spots on the primaries are larger than in that species, and the central band on the secondaries is formed of lunules instead of isolated spots. The markings of the underside are also more definite.

15. *Phyciodes cassiopea.*

♀. Exp. 1·9 in. Outer margin with deep indentation. Above dark brown; seven whitish spots on the apical two thirds of the primaries: secondaries crossed by a median transverse band; a submarginal row of lunules, and inside this row an indistinct line parallel to the outer margin. Base of the primaries beneath reddish: secondaries pale pinkish brown, outer margin dark, and a dark mark on the costa near the apical

angle; a submarginal row of lunules and dark irregular marks across the rest of the wing.

Hab. Costa Rica (*H. Rogers*).

Mus. nostr.

This species has a reddish base to the primaries beneath as in *P. smerdis* (Hew.); but the pattern of the secondaries beneath is different. We have not yet received the male.

16. *Phyciodes Durnfordi.*

♂. Exp. 1·4 in. Above uniform dark brown, with obsolete red spots in and about the cell of the primaries, and one at the end of the cell of the secondaries. Beneath—primaries reddish brown; between the end of the cell and outer margin is a broad dark band containing two light spots, one on the costa, the other on the inner margin; a narrower dark band crosses the wing through the end of the cell; two others still narrower cross the cell itself: secondaries brown, marked with barely perceptible lighter and darker marks; there is a submarginal row of very indistinct lunules, inside of which are four white spots.

♀. Exp. 1·55 in. Above dark brown, with the red markings of the male larger and much more distinct. Beneath much paler, the markings on both wings are also more plainly shown.

Hab. Buenos Ayres (*H. Durnford*).

Mus. nostr.

17. *Phyciodes taphius.*

♂. Exp. 1·5 in. Above brown; apex of the primaries darker; a band of three separate fulvous spots crosses the wing from the costa to the anal angle: the secondaries have three concentric lines of pale tawny. Beneath dull yellow; a tawny streak crosses the primaries; from the costa to the anal angle whitish; spots at the apex near the middle of the outer margin; both wings have a submarginal row of light lunules: the basal half of the secondaries mottled with light markings; three black spots with light edgings between the median branches.

Hab. Ecuador, Canelos and St. Inez (*Buckley*).

Mus. nostr.

Obs. The nearest ally is *P. elaphiœa* (Hew.), from which it differs in having the band of the primaries broken.

18. *Eresia epione.*

♂. Exp. 2 in. Above uniform dark steel-blue; inner

margin of secondaries red. Beneath brown; nervures and line between each black; base of the secondaries yellow.

Hab. Antioquia (*Salmon*).

Mus. nostr.

19. *Eubagis geta.*

♂. Exp. 1·8 in. Above sage-green; apex and outer margin of primaries black, deeply indented on the inner side. Beneath blackish brown, with six large white spots, one at the apex and one close to the middle of the outer margin, one beyond the cell touching the costa, one over the middle of the first median branch, one crossing the median nervure into the cell, and one at the base of the cell; outer margin rufous towards the apex; secondaries white, crossed by five dark narrow rufous bands.

Hab. Apolobamba, Bolivia.

Mus. nostr.

Obs. Allied to *E. ines*, Godt., from Brazil, the dark apex of which encloses a green spot—this spot in the present species being confluent with the green of the rest of the wing. *E. ines* has a narrow submarginal black line on the underside of the primaries, not seen in *E. geta*.

E. setabis of Doubl. & Hew., from Venezuela and New Granada, which has been united to *E. ines*, seems to us to be a distinct species.

20. *Callithea Bartletti.*

♂. Exp. 2·5 in. Above deep purple, central area of the primaries almost black; apex (broadly) and outer margin of both primaries and secondaries metallic green. Beneath—basal third of primaries and basal half of secondaries ochre; rest of both wings green; end of the cell and on either side of the first median branch of primaries blackish; a black spot between the first and second median branches and three others running parallel to the outer margin; the secondaries have four bands of spots on the distal half arranged parallel to the outer margin.

♀. Exp. 2·5 in. Apex of primaries more rounded than in the male; base of the wings greenish black instead of purple, the green margin of both wings broader.

Hab. Lower Ucayali (*E. Bartlett*); Rio Napo.

Mus. nostr.

Obs. Allied to *C. Degandi*, the chief difference consisting in the deep purple colour of the upper surface, which in *C. Degandi* is rich blue. On the under surface they are nearly alike.

We have long had specimens of this species from Mr. Bartlett's collection in our possession; the receipt of additional examples, including the female, from the Rio Napo, sent to Mr. Whitely by a correspondent, induces us to describe it.

21. *Adelpha sophax.*

♂. Exp. 2·1 inch. Above dark brown; primaries with obsolete darker bands across the cell; the secondaries have three lighter bands parallel to the margin, and a fourth straight, passing across the wing through the cell to the anal angle; a fulvous band crosses the primaries from the anal angle to the costa beyond the cell. Beneath fulvous: the primaries with a band corresponding to that on the upper surface silvery white; four spots in the apex and two in the cell, the basal one triangular, the outer one oval; both the latter margined with black: secondaries have a dark, nearly straight band crossing the wing beyond the cell to the anal angle; the margins of this line are lighter; an irregular band of silvery white crosses the cell near its base, another crosses the wing through the end of the cell; there is also a submarginal row of seven spots of the same colour.

Hab. Costa Rica (*H. Rogers*); New Granada.

Mus. nostr.

Obs. In the coloration of the upper surface this species resembles *A. tizona* (Feld.). On the underside it resembles *A. epione*, Godt., from which it differs chiefly in having a submarginal row of white spots on the hind wings and in the coloration of the bands.

Papilionidæ.

Pierinæ.

22. *Leptalis Ribbei.*

♀. Exp. 1·95 in. Above dark brown; nearly the whole of the cell, and the area below the median nervure from the origin of the third branch nearly to the subcostal nervure, and the posterior wings except the margin diaphanous; the nervures dark; an apical spot and a band divided in two, running from the costa to the anal angle of the primaries, white. Beneath—the dark markings paler; a submarginal band inside a row of six white spots on the secondaries, a submarginal row of obsolete white spots on the primaries.

Hab. Chiriqui (*Ribbe*).

Mus. Dr. O. Staudinger.

Obs. Allied to *L. theonoë*; but the diaphanous portion of the

basal half of the primaries is much more extensive, the apical spot on the primaries is very small, and there is no spot on the costa near the apical angle of the secondaries.

Dr. Staudinger's collection contains a single specimen of this species, the only one we have yet seen.

XXXI.—*On the Identity of the Ophiuran Genera* Ophiopleura, *Danielssen and Koren*, and Lütkenia, *Duncan, with Notes on the Species.* By Prof. P. Martin Duncan, M.B. Lond., F.R.S., &c.

The remarkable Ophiurans collected at Discovery Bay by Mr. Hart, naturalist on board H.M.S. 'Discovery,' were described by me in the 'Annals' for August 1878; and their structural characteristics were so remarkable and different from those of any genus with which I was acquainted, that it was necessary to include the forms under a species of a new genus, *Lütkenia.*

Of course all the available literature, relating to the northern Ophiurans especially, was searched before the generic diagnosis and title were decided upon; and I was not aware that any thing had been published relating to the subject later than Marenzeller's report on the Cœlenterata, Echinodermata, and worms of the Austro-Hungarian North-pole expedition, 1877. But a "Separat-Aftryk af Nyt Magazin for Naturvidenskaberne," Christiania, was published in 1877; and it relates to the Echinodermata of the Norske Nordhavsexpedition, written by Danielssen and Koren.

It contains the description of an Ophiuran which was sufficiently peculiar to be separated from all others in a new genus, *Ophiopleura.* The single species is fortunately well illustrated and has been called *Ophiopleura borealis*, Dan. & K. The specimens came from 510–570 fathoms, temperature 1°·3 C., and not further north than 63° 5′ N. lat.

The form was so decidedly separable, that the Scandinavians made a new family for its reception; and they consider the irregular arrangement and shape of the teeth of paramount importance:—"Tænderne i uregelmæssige Rækker, fladtrykte, tilspidsede." This is the essential characteristic of *Lütkenia*, nobis. Again, their generic diagnosis corresponds with that of the genus I had established, with an exception which is somewhat remarkable. In the description of the species much is made of the presence of ten "Ribber"